



PRACTICAL M-ARY DEMODULATOR AND METHOD OF
OPERATION FOR USE IN A CDMA WIRELESS
NETWORK BASE STATION

ABSTRACT OF THE DISCLOSURE

A demodulator for demodulating S orthogonal modulation codes, each code comprising M binary bits representing an N -bit data symbol, where $M = 2^N$. The demodulator comprises a Logic 00 detector for comparing pairs of binary bits to 00 and outputting $[+1, +1]$ if a match occurs or $[-1, -1]$ otherwise; S accumulators; and a Logic 00 switch array comprising S switches, where a K th switch couples an output of the Logic 00 detector to a first input of a K th S accumulator. The demodulator also comprises a storage array for storing S code masks, each code mask comprising $M/2$ code mask bits and each $M/2$ code mask bit associated with a corresponding sequential pair of M binary bits; and control circuitry for synchronously applying the $M/2$ code mask bits in a K th code mask as a control signal to the K th switch in the Logic 00 switch array.